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Welcome to the White Rock Training Center

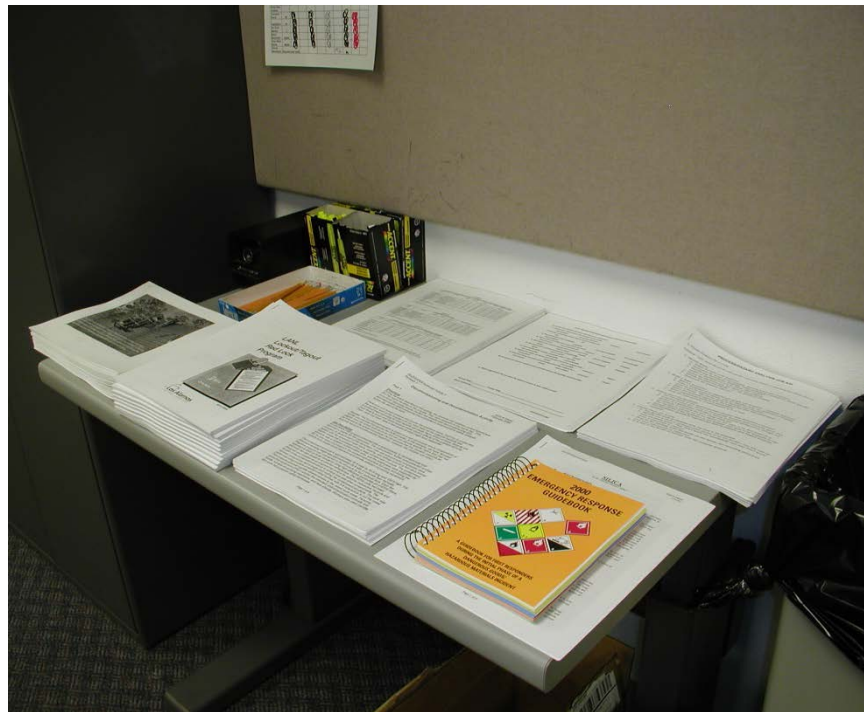


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Before You Sit Down . . .

Pick up course materials when you enter the room.

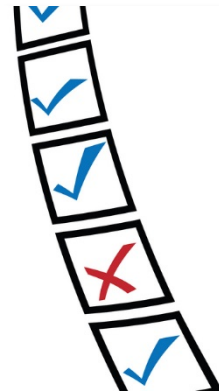
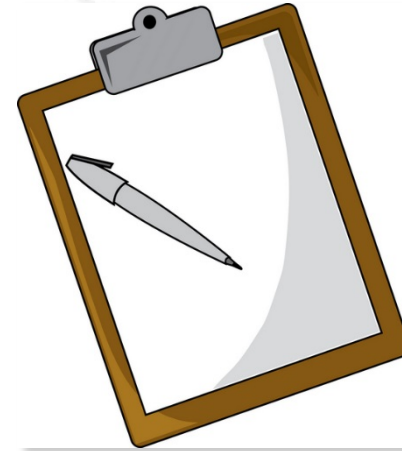


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When in the Classroom . . .

- Be sure to sign the roster.
 - print your name legibly
 - sign your name
 - print your Z number
- Make sure to fill out a class evaluation. We value your feedback!

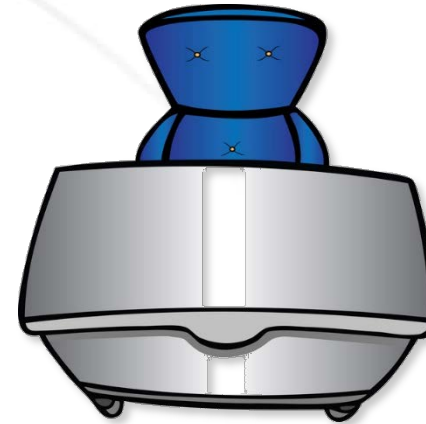


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Please Be Courteous!

- So others can exit easily, always push in your chair when you take a break or leave the classroom.
- Turn off cell phones or put them on vibrate.



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Cell Phones

- Your cell phone texting or conversation may interfere with the learning process of other students.
- Please take your phone calls to the student lobby and have your conversation there.



Yes, we're all very interested in what you're having for dinner tonight.

(Please keep phone conversations to yourself.)



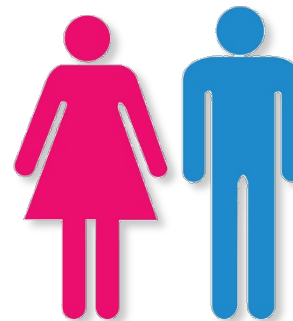
Thank you!

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Break Time

- Telephones are located in the front lobby just beyond the reception area.
- Soft drink and snack machines are located by the telephones.
- Restrooms are located off the hallway between the reception area and classrooms 114–118.



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Recycle Your Aluminum Cans & Plastic Bottles

- Please put trash and recyclables in the proper receptacles located in the front lobby. Please don't leave trash at your seat.

Do not put plastic or aluminum in trash cans.

Plastic and aluminum go in here.



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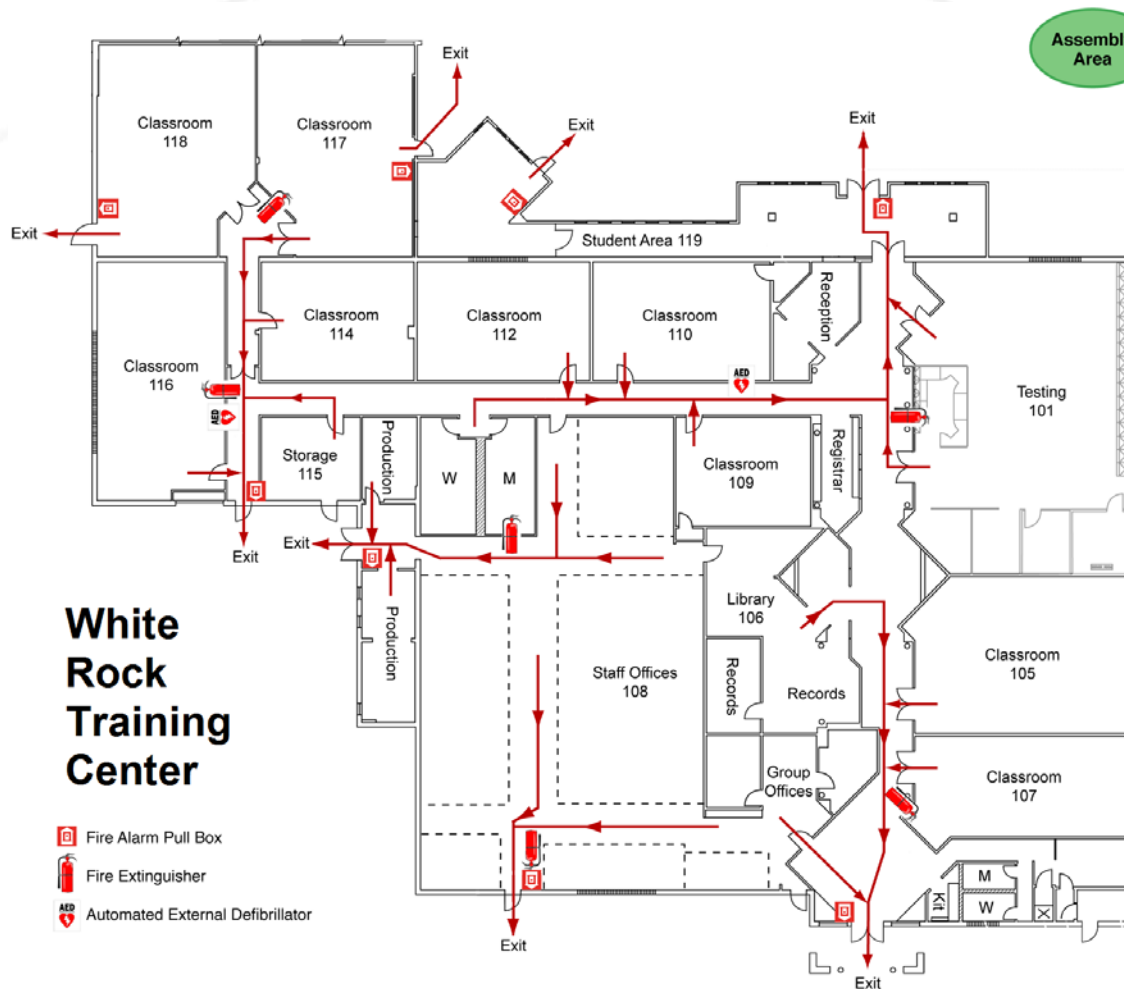
Emergency Evacuation

- If an alarm sounds, evacuate the building and report immediately to the assembly area.
- Eating, drinking, and smoking are prohibited during evacuations and at the assembly area.



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- DO NOT LEAVE AREA
- NO FOOD OR DRINK
- NO SMOKING
- MINIMIZE TALKING

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WRTC Evacuation Assembly Area

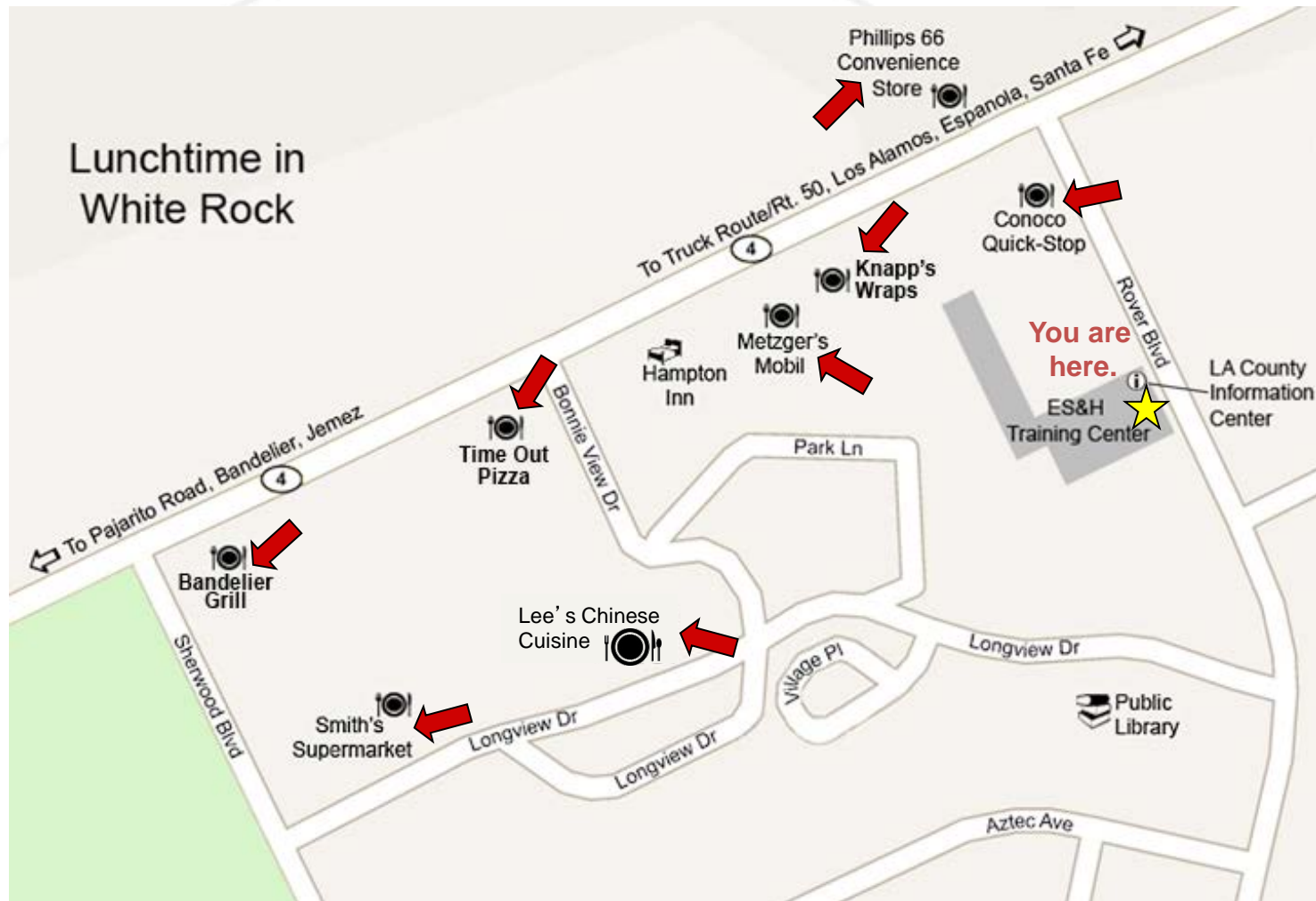


After exiting the building during an emergency, assemble at the grassy knoll beside the front parking lot.

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Lunchtime in White Rock



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You are required to pass an electronic exam with this class.



If you have a CRYPTOCard with administrative (A-level) authorities, you must have it with you to be proctored for the exam.

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RCT: 2.01 RADIOLOGICAL DOCUMENTATION

Course #32974

April 2016

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Overview of Lesson

- This unit will present an overview of radiological documentation requirements at LANL.

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Objectives

- 2.01.01 List the types of records/reports that Radiation Protection (RP) personnel (within RP-PROG, RP-SVS, and ADESH) are responsible for maintaining at LANL.
- 2.01.02 Describe the types of records/reports used at LANL by RP personnel for
 - Radiological Work Permits (RWPs).
- 2.01.03 Describe the types of records/reports used at LANL by RP personnel for
 - Survey Reports.

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Objectives

- 2.01.04 Describe the types of records/reports used at LANL by RP personnel for
 - Analysis Reports.
- 2.01.05 Describe the types of records/reports used at LANL by RP personnel for
 - Radiological Deficiency Reports.
- 2.01.06 Describe the types of records/reports used at LANL by RP personnel for
 - ALARA Documentation.

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Objectives

- 2.01.07 Describe the types of records/reports used at LANL by RP personnel for
 - Exposure Reports.
- 2.01.08 Describe the purpose of the radiation control technician (RCT) logbook.
- 2.01.9 From a list, select the items that should be documented in an RCT logbook.

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Objectives

- 2.01.10 Explain the requirements for the records management system, such as quality control (QC), auditability/retrievability, and management information at LANL.
- 2.01.11 Describe the RCT's role in continuous improvement of radiological controls (e.g., identifying and correcting minor deficiencies, identifying and responding to unexpected conditions, contributing to fact-findings and problem solving, and contributing to post-job reviews).

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2.01.01 Radiological Records at LANL

- P121, Chapter 20, Article 2013 states that the following types of radiological records must be maintained at LANL:
 - Radiation Protection Program (RPP) policy documents, requirements documents, and procedures;
 - Individual radiological doses;
 - Personnel training (course records and individual records);
 - As-low-as-reasonably achievable (ALARA) program implementation;

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2.01.01 Radiological Records at LANL

- Radiological instrumentation test, maintenance, and calibration;
- Personnel monitoring-device testing, maintenance, and calibration;
- Radiological surveys;
- Area-monitoring dosimetry results;
- RWPs
- Radiological performance indicators and assessments;

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2.01.01 Radiological Records at LANL

- Documentation of quality assurance activities;
- Radiological Incident Reports and Radiation Protection Observations (RPOs);
- Radioactive sealed source (RSS) accountability and control;
- Release of material records;
- Radiological safety reviews of facility designs, controls, and operations; and
- Radiation generating device (RGD) survey reports

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2.01.02 Radiological Work Permits (RWPs)

- P121, Chapter 11, *Radiological Work Control*

| Table 11-3. Entry Requirements by Area Designation | |
|---|--|
| Areas | Entry |
| Radiological Controlled Area (RCA) Radiological Buffer Area (RBA) Radioactive Material Area (RMA) Soil Contamination Area (SCA) | Posted entry requirements, including General Employee Radiological Training (GERT) as minimum training; in accordance with the Facility Radiation Protection Requirements document (FRPR) if established |
| Radiation Area (RA) Contamination Area (CA) High Radiation Area (HRA) 0.1 to 1 rem in 1 hr @ 30 cm | In accordance with the FRPR (if established) or a Radiological Work Permit (RWP), including Radiological Worker (RW) as minimum training |
| HRA >1 rem in 1 hr @ 30 cm Very High Radiation Area (VHRA) High Contamination Area (HCA) Airborne Radioactivity Area (ARA) Hot Job Exclusion Area ^a (HJEA) | RWP is required for entry into these areas. Requirements in Article 1124 also apply. |
| ^a When HJEA is established to control access during planned radiological work, an RWP is required for entry. When established in response to an emergency situation, emergency response procedures are used, including those for access control. | |

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P121, Chapter 11, *Radiological Work Control*

| Table 11-4. Radiological Work Permit (RWP) and Integrated Work Document (IWD) Decision Requirements for Radiological Work | |
|--|--|
| Hazard Grading Questions | Examples |
| <p>Does the work involve any of the following?</p> <ul style="list-style-type: none"> ▪ Work that could contaminate uncontrolled areas or the environment; ▪ Work in (or likely to create) an Airborne Radioactivity Area (ARA) with levels >40 derived air concentration (DAC); ▪ Dose Rate >1 rem/hr in the work area (equivalent dose to whole body, at 30 cm from accessible surfaces); ▪ Extremity / shallow dose rate >10 rem/hr (considering all radiations, at contact with accessible material or device); or ▪ Work expected to create uncharacterized radiological conditions, including: <ul style="list-style-type: none"> – working outside engineered controls, or – breaching engineered containment systems. | <ul style="list-style-type: none"> ▪ Remediation of legacy contamination in proximity to uncontrolled areas ▪ Decontamination of liquid waste containment systems ▪ Opening a highly contaminated radioactive material shipment ▪ Retrieving, packaging, shipping, and receiving high activity activation products ▪ Breach of internally contaminated systems where the breach could create an airborne radioactivity hazard, including maintenance or troubleshooting activities on actinide hoods, gloveboxes, and associated ventilation systems ▪ Decontamination and demolition of radiological facilities or contaminated systems |
| <p>YES – This is High-Hazard radiological work, and an Integrated Work Document (IWD) and Radiological Work Permit (RWP) are required.</p> | |
| <p>NO – Continue with questions below.</p> | |

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P121, Chapter 11, *Radiological Work Control*

| Table 11-4. Radiological Work Permit (RWP) and Integrated Work Document (IWD) Decision Requirements for Radiological Work | |
|---|--|
| Hazard Grading Questions | Examples |
| <p>Does the work involve any of the following?</p> <ul style="list-style-type: none"> ▪ Dose Rate >5 mrem/hr and <1 rem/hr (equivalent dose to the whole body, at 30 cm from accessible surfaces); ▪ Extremity / shallow dose rate >50 mrem/hr and <10 rem/hr (considering all radiations, at contact with accessible material or device); ▪ Work in (or likely to create) a High Contamination Area (HCA); ▪ Work in (or likely to create) a Contamination Area (CA); or ▪ Work in (or likely to create) an Airborne Radioactivity Area (with levels between 1 and 40 DAC or > 12 DAC-hr in a week). | <ul style="list-style-type: none"> ▪ Use of an accountable source with a dose rate greater than 5 mrem/hr at 30 cm to performance test health physics instruments ▪ Routine handling of dispersible radioactive materials within intact engineered controls, where the activity and work area are stable, well-characterized, controlled in accordance with the Facility Radiation Protection Requirements document (FRPR), and where sustained performance demonstrates effective controls (such as routine glovebox work). |
| <p>YES – This is Moderate-Hazard radiological work, and an IWD (or “qualified worker”) and either an RWP or FRPR (for routine, stable, well-characterized conditions) are required. See Table 11-3 for RWP thresholds; work with a high activity radioactive sealed source (RSS) >100 mrem/hr at 30 cm requires an RWP.</p> <p>NO – Continue with questions below.</p> | |

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P121, Chapter 11, *Radiological Work Control*

| Table 11-4. Radiological Work Permit (RWP) and Integrated Work Document (IWD) Decision Requirements for Radiological Work | |
|--|--|
| Hazard Grading Questions | Examples |
| <p>Does the work involve routine activities in a facility within the following limits?</p> <ul style="list-style-type: none">• Dose Rate <5 mrem/hr (equivalent dose to the whole body, at 30 cm from accessible surfaces);• Extremity / shallow dose rate <50 mrem/hr (considering all radiations, at contact with accessible material or device);• Contamination < Table 14-2 on readily accessible surfaces or penetration of internally contaminated systems; and• Measurable airborne radioactivity < 1 DAC. | <ul style="list-style-type: none">• Administrative work such as management walkarounds or inspections• Handling robust containers of radioactive material such as closed, surveyed, Department of Transportation (DOT), or standardized special nuclear material (SNM) containers• Leak-testing of accountable sealed sources (<5 mrem/hr @ 30 cm)• Conducting routine radiological surveys• Analyzing laboratory samples |
| <p>YES –This is Low-Hazard radiological work, occupational exposure will likely be less than 100 mrem/year, and neither an IWD nor RWP are required.</p> <p>Follow the Integrated Work Management (IWM) process to address nonradiological hazards.</p> | |
| <p>NO – Continue with questions below.</p> | |

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P121, Chapter 11, *Radiological Work Control*

| Table 11-4. Radiological Work Permit (RWP) and Integrated Work Document (IWD) Decision Requirements for Radiological Work | |
|---|--|
| Hazard Grading Questions | Examples |
| <p>Does the work only involve the following?</p> <ul style="list-style-type: none"> • Work with commercially available analytical devices containing RSSs when used as designed, and with source remaining inside the device (does not include high dose rate sources such as irradiators, soil density gauges); • Work with consumer products containing radioactive material incidental to their operation (e.g., exit signs, welding rods, camera lenses, luminous dials, smoke detectors); • Work with radiation generating devices (RGDs) categorized as cabinet x-ray devices, unattended RGD installations, or electronic devices that produce ionizing radiation incidentally (<0.5 mrem/hr at 5 cm) as defined in Chapter 18, Radiation Generating Device (RGD) Control; • Work with naturally occurring radioactive material that has not been technologically enhanced; or • Storage, handling, or use of RSSs less than 10% of accountability thresholds in Appendix 18A. | <ul style="list-style-type: none"> • Servicing or replacing smoke detectors • Work with thoriated lenses, thorium or uranium-containing lantern mantles, tritium exit signs, radium dial watches, etc. • Work with uranium ore • Operating certified cabinet x-ray systems • Handling low activity check sources, including RCT source-checking instruments |
| <p>YES – These activities are considered nonradiological work, occupational exposure will be much less than 100 mrem/year, and an IWD and RWP are not required.</p> <p>Follow the IWM process to address nonradiological hazards.</p> <p>NO – Contact a Radiation Protection Subject Matter Expert (RPSME) for guidance.</p> | |

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2.01.02 Radiological Work Permits (RWPs)

- Documentation associated with an RWP includes
 - RWP
 - RWP Pre-Job Briefing Log
 - Pre-Job and Post-Job Surveys
 - Dose Records

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RWP and Pre-Job Briefing

RADIOLOGICAL WORK PERMIT



Revision
1

RWP ID
2012-0301

Site Name
OJT

Effective Date
10/26/2012

Expiration Date
1/25/2013

Requester and Point of Contact

| Requested By Point of Contact (POC) | LastName FirstName MI | ZNumber | Group | Work Number | Pager |
|--|--|--|-----------------------------------|--------------------------------------|-----------------------|
| | Courville Kenneth C | 171508 | RP-1 | | (505) 664-4819 |
| | Courville Kenneth C | 171508 | RP-1 | (505) 667-9358 | (505) 664-4819 |
| Work Summary Package Leaking Accountable Sealed Source & Performing Decontamination | | | | RCT Contact Phone 667-9358 | RCT Pager 412-8659 |
| Training Requirements | Alarming Dosimeter Requirements | Individual dose limit (mrem) 120 | EPD Setpoint (mrem) 120.0 | Job Level Pre-Job Frequency Daily | |
| <input type="checkbox"/> GERT <input checked="" type="checkbox"/> Rad Worker | <input checked="" type="checkbox"/> EPD <input checked="" type="checkbox"/> Collective goal is required | Collective dose limit (person-mrem) 360 | EPD Setpoint (mrem/hour) 240.0 | | |

Work Description

Work Description

Contain and package leaking accountable sealed source for disposal. Decontaminate Room 107, source storage, as necessary.
Leaking Pu-Be source with a dose rate 100mR/hr @ 30cm. Removable contamination detected at 50000 dpm/100cm² alpha.

1. Remove leaking source from storage container
2. Double bag leaking source
3. Place source into an approval shipping container
4. Decon source storage container

The potential concurrent hazards are: Slips, Trips, Falls, Ergonomics

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RWP and Pre-Job Briefing

| Radiological Control Requirements, Per Stage | | | | | | |
|---|--------------|---|-------------------------------------|------------------------|-------|-----------------------------|
| Stage | RCT Coverage | | Stage Description | | | |
| 1 | Continuous | | Package Leaking Source for Disposal | | | |
| WA | TA | Bldg | Building Name | | Floor | Work Area Description |
| 1 | 98 | 107 | Main Lab | | First | Basement |
| Radiological Conditions | | Removable Contamination: Gross Alpha and Beta | | Airborne Radioactivity | | External Exposure |
| Expected | | 50000 dpm /100 cm ² | | 2.25 DAC | | 100 mrem in 1 hour at 30 cm |
| Maximum Allowable | | 5.00E5 dpm /100 cm ² | | 50 DAC-Hours | | 300 mrem in 1 hour at 30 cm |
| Personal Protective Equipment (PPE): Clothing Level II PPE with hood is required. | | | | | | |
| Respiratory Protection Air Purifying Respirator (APR). Air monitoring is required. A respirator card is required. | | | | | | |
| External Radiation Dosimetry and Controls TLD, EPD PNAD wrist dosimeter | | | | | | |
| Work Area Configuration One or more systems will be breached. See the hold points and instructions. Red light the room and place barriers across all entrances. Follow RP-1-TA55-SSP-017 to release the room from the Red light. Use 18" tongs when handling source. | | | | | | |
| Bioassay Requirements Annual Pu RAS and a TIMS urine sample | | | | | | |
| Radionuclide | | | | | | |
| Pu-239 | | | | | | |

RPAS RP-1 RWP April 2008

Printed on: March 2, 2016

Page 1 of 2

RCT_2.01_Documentation_32974_VG,R0.0

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RWP and Pre-Job Briefing

RADIOLOGICAL WORK PERMIT

Revision
1

RWP ID

2012-0301

| Hold Point | Hold Point Description | | | | | | |
|--|--|---|---------------|------------------------|-----------------------|----------------------------|--|
| 1 | When Level 2 PPE is worn, a portable CAM SHALL be placed strategically in the work area. | | | | | | |
| 2 | When Level 2 PPE is worn, work may NOT commence until a RP-1 survey map has been prepared that documents the location of the CAM and justification for its placement (i.e., Job specific air flow study or Previous air flow study.) | | | | | | |
| 3 | After breaching a system perform contamination surveys to ensure maximum levels have not been exceeded and check CAM(s) for elevated levels. | | | | | | |
| 4 | Prior to placing source into approve shipping container. Double bag the source, survey the outermost bag and decon the outermost bag to NDA, if necessary. | | | | | | |
| Instruction | Instruction Description | | | | | | |
| 1 | Tacky mat shall be placed under work area as directed by the RCT. | | | | | | |
| Stage | RCT Coverage | Stage Description | | | | | |
| 2 | Continuous | Decon of Work Area and Equipment | | | | | |
| WIA | TA | Bldg | Building Name | Floor | Work Area Description | | |
| 1 | 98 | 107 | Main Lab | First | Basement | | |
| Radiological Conditions | | Removable Contamination: Gross Alpha and Beta | | Airborne Radioactivity | | External Exposure | |
| Expected | | 50000 dpm /100 cm ² | | 2.25 DAC | | 25 mrem in 1 hour at 30 cm | |
| Maximum Allowable | | 5.00E5 dpm /100 cm ² | | 50 DAC-Hours | | 50 mrem in 1 hour at 30 cm | |
| Personal Protective Equipment (PPE): Clothing Level II PPE with hood is required. | | | | | | | |
| Respiratory Protection Air Purifying Respirator (APR). Air monitoring is required. A respirator card is required. | | | | | | | |
| External Radiation Dosimetry and Controls TLD, EPD PNAD | | | | | | | |
| Work Area Configuration One or more systems will be breached. See the hold points and instructions. Red light the room and place barriers across all entrances. Follow RP-1-TA55-SSP-017 to release the room from the Red light. | | | | | | | |

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RWP and Pre-Job Briefing

| | |
|---------------------------------------|--|
| Bioassay Requirements | |
| Annual Pu RAS and a TIMS urine sample | |
| Radionuclide | |
| Pu-239 | |
| Hold Point | Hold Point Description |
| 1 | When Level 2 PPE is worn, a portable CAM SHALL be placed strategically in the work area. |
| 2 | When Level 2 PPE is worn, work may NOT commence until a RP-1 survey map has been prepared that documents the location of the CAM and justification for its placement (i.e., Job specific air flow study or Previous air flow study.) |
| 3 | After breaching a system perform contamination surveys to ensure maximum levels have not been exceeded and check CAM(s) for elevated levels. |
| Job Level Instructions | |
| Number | Instructions |
| 1 | If CAM alarms while in APR, Place work in a safe configuration and exit area as discussed in the Pre-Job Briefing unless otherwise directed by the RCT(s). |
| 2 | If CAM alarms while in APR, and the measured airborne radioactivity is >1000 DAC-h, immediately exit the area. |
| 3 | When respiratory protection is worn, SAT(s) are required. If a portable CAM is used the CAM filter may be sent to HPAL as the SAT. |
| 4 | Wrist dosimeters are only required for personnel handling radioactive source material. |
| 5 | Performance test radiological instruments prior to being work. |
| RPAS RP-1 RWP April 2008 | |
| Printed on: March 2, 2016 | |
| Page 2 of 2 | |

RCT_2.01_Documentation_32974_VG,R0.0

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RWP and Pre-Job Briefing

| RADIOLOGICAL WORK PERMIT | | Revision 1 | RWP ID 2012-0301 | |
|--|---|-------------------|----------------------------|--------------------------|
| 6 | Post area as HJEA. | | | |
| 7 | EPD settings; Dose rate alarm: 60 mrem/hr photon, 60 mrem/hr neutron, Integrated dose alarm 120 mrem/hr total (photon and neutron). | | | |
| Completed by RP-1 SME | | | | |
| I acknowledge that all radiological hazards and conditions involved in the scope of the work are adequately addressed. | | | | |
| Signature | <i>Courville Kenneth C</i> | ZNumber 171508 | Group RP-PROG | Work Phone 5056679358 |
| | | | | Date 11/05/2012 |
| REMINDER: The pre-job survey or anticipated radiological conditions need to be attached to the RWP. | | | | |
| Approvals | | | | |
| RP-1 Review (Independent SME) | ZNumber | Group | Work Phone | Date |
| RLM Approval | ZNumber | Group | Work Phone | Date |
| Other Approval, if Required | ZNumber | Group | Work Phone | Date |

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| | | | |
|------------------|--------------------------|---------------|-----------------------------|
| Site Name OJT | Request Status Closed | Revision 1 | R/WP ID 2012-0301 |
|------------------|--------------------------|---------------|-----------------------------|

By signing this log, I acknowledge that I have read the radiological conditions and protection requirements, and I attended a Pre-Job Briefing on the RWP. I understand these radiological conditions and protection requirements, and I will abide by them.

[illegible]

Note: All topics that are checked must be covered, for each applicable RWIP stage.

- Form Closed By

Date _____

RPAS RP-1 FORM 008.0 (03/07)

Printed on: March 2, 2016

Page 1

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2.01.03 Survey Reports

- Types of surveys include
 - Contamination survey for fixed and removable alpha/beta contamination
 - Radiation survey for external radiation
 - Large Area Survey (Masslinn)
 - Contamination survey for tritium
 - Smear survey
 - Air sampling
 - H-3 oil sampling
 - Sampling for various oils

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Types of Surveys

- Water sampling
- Soil sampling
- Nasal sampling
- Release survey with controls [Health Physics Radiation Materials Survey (HPRMS) Tag]
- Release survey without controls (Release Log)
- Incoming radioactive material shipment survey
- Outgoing radioactive material shipment survey
- Room survey for down-posting a controlled area to an uncontrolled area

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Types of Surveys

- Posting a variety of different types of radiological areas
- Survey of radioactive waste containers
- Survey and tagging of radioactive laundry [personal protective equipment (PPE)]
- Survey, package, and transport respirators for decontamination
- Survey and tag instruments to go to Radiation Instrumentation and Calibration (RIC)

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Alpha Survey Instrument Performance Test Log



Alpha Survey Instrument Performance Test Log

Instrument Manufacturer: _____ Model: _____ HSE# (P/N): _____ Cal Due Date: _____

Performance Test Reference Source

☐ ACS-5 Calibrator ☐ TMA/Eberline ☐ Other: _____

Check Source

ID #: _____

Isotope: _____

Activity: _____

Reference: _____

$\pm 20\%$: _____

ID: _____ Filter Position or Range: 1 2 3 4
 Isotope: _____ Reference Reading: _____
 Activity: _____ Acceptance Range ($\pm 20\%$) / / / /

Date Reference Readings Established

RCT Name

Signature

Z Number

| Date/Time | Background | Reference Reading Scale 1 | Reference Reading Scale 2 | Reference Reading Scale 3 | Reference Reading Scale 4 | Check Source Reading | Pass/Fail | Printed Name/Signature | Comments |
|-----------|------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|-----------|------------------------|----------|
| | | | | | | | | | |
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Beta/Gamma Instrument Performance Test Log



Beta/Gamma Survey Instrument Performance Test Log

Reference Source

| | | | | | | |
|-----------------|---------------------------------|-------|-------|-------|-------|--------------------------|
| ID: _____ | Filter Position or Range: | 1 | 2 | 3 | 4 | Check Source ID #: _____ |
| Isotope: _____ | Reference Reading: | _____ | _____ | _____ | _____ | Isotope: _____ |
| Activity: _____ | Net Reference Reading: | _____ | _____ | _____ | _____ | Activity: _____ |
| Bkg: _____ | Acceptance Range ($\pm 20\%$) | / | / | / | / | Reference: _____ |
| | | | | | | $\pm 20\%$: _____ |

Instrument Manufacturer: _____ Model: _____ HSE# (P/N): _____ Cal Due Date: _____

Date Reference Readings Established _____ RCT Name _____ Signature _____ Z Number _____

| Date/Time | Background | Net Reference Reading Scale 1 | Net Reference Reading Scale 2 | Net Reference Reading Scale 3 | Net Reference Reading Scale 4 | Check Source Reading | Pass/Fail | Printed Name/Signature | Comments |
|-----------|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------|-----------|------------------------|----------|
| | | | | | | | | | |
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Response Check Tag – Green Tag

| | | | | | |
|--|-------------|----------------|-------------|----------------|-------------|
| RP-1-Form-41.01 | | | | | |
| Response Check Tag | | | | | |
| Instrument | | | | | |
| Inst. Manufacturer: _____ | | | | | |
| Model: _____ HSE (P/N) #: _____ | | | | | |
| Source | | | | | |
| ID: _____ Isotope: _____ Activity _____ | | | | | |
| Reference: _____ Alarm set point _____ | | | | | |
| Or Acceptance range: _____ / _____ ($\pm 20\%$ of reference) | | | | | |
| Date: _____ RCT initials _____ | | | | | |
| Initial | Date | Initial | Date | Initial | Date |
| | | | | | |
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Survey Form

| RP-1 RADIOLOGICAL SURVEY FORM | | | | | | | | RP-1 Survey Number: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|-----------------------|------------|--|------------|--|---------------------------|---------------------------|------------------|----------------------|------------------|----------------------|-------|---------------------|-----|-----|------------|--|--|--|--|--|--|---------|--|--|--|--|--|--|---------------------|--|--|--|--|--|--|--------------------|--|--|--|--|--|--|
| SAMPLE DESCRIPTION | | | | INSTRUMENTATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Date/Time: _____ No. of Samples: _____ TA: _____ Bldg: _____ Rm: _____ RCT: _____ Z Number: _____ RCT Signature: _____ MS: _____ Phone: _____ Fax: _____ | | | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">TYPE</th> <th style="width: 10%;">HSE No.</th> <th style="width: 10%;">CAL Due</th> <th style="width: 10%;">% EFF</th> <th style="width: 10%;">CF or Detector Size</th> <th style="width: 10%;">BKG</th> <th style="width: 10%;">MDA</th> </tr> </thead> <tbody> <tr><td>Beta/Gamma</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Neutron</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>alpha smear counter</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Beta smear counter</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> | | | | | | TYPE | HSE No. | CAL Due | % EFF | CF or Detector Size | BKG | MDA | Beta/Gamma | | | | | | | Neutron | | | | | | | alpha smear counter | | | | | | | Beta smear counter | | | | | | |
| TYPE | HSE No. | CAL Due | % EFF | CF or Detector Size | BKG | MDA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Beta/Gamma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Neutron | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| alpha smear counter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Beta smear counter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PURPOSE OF SURVEY | | | | REMARKS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Routine <input type="checkbox"/> Pre-Job <input type="checkbox"/> Post-Job <input type="checkbox"/> Hot-Job <input type="checkbox"/> Item Release <input type="checkbox"/> Offsite Shipment <input type="checkbox"/> Onsite Shipment <input type="checkbox"/> Non-Routine / Other: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ADDITIONAL INFORMATION | | | | RP-1 REVIEW BY | | SAMPLE TRACKING NUMBER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RWP No.: _____ Work Request No.: _____ Incident No.: _____ | | | | | | <input type="checkbox"/> SMEARS COUNTED AT HPAL, SEE HPAL RESULTS FOR MDAs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Point | Item / Area | Direct Survey Results | | Smear Survey Results | | Tritium | External Radiation Survey | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Alpha | Beta/Gamma | Alpha | Beta/Gamma | Smear Results | at Contact | | at 30 cm | | at 1 Meter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | dpm* | dpm* | dpm* | dpm* | dpm* | gamma (mR/hr) | neutron (nrem/hr) | gamma (mR/hr) | neutron (nrem/hr) | gamma (mR/hr) | neutron (nrem/hr) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Health Physics Analysis Laboratories (HPAL) Submittal Form

| Reset Form | | Print Form | | RP-SVS HPAL SAMPLE SUBMITTAL FORM | | RP-SVS-HPAL-FORM-001 Effective Date: 17-Dec-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------|-----|-------------|----------------|-----------------|-------|----------------------|--------------------------|--------------------------|--------------------------|--|--|--|--|--|--|---------|---------------|--|--|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|---------|----------|--------------------------|--------------------------|---------|---------|--------------------------|--------------------------|---------|--|--------------------------|--------------------------|-----------|--------------------------|--|--|--------------------------|--|--|--|--|--|--------------------------|------------|--|--|--|--|--|--|--|--|--|--------------------------|--|--|
| 1 Submit Date: <input style="width: 150px;" type="text"/> No. Samples: <input style="width: 50px;" type="text"/> Sample TA: <input style="width: 80px;" type="text"/> Bldg.: <input style="width: 80px;" type="text"/> Room: <input style="width: 80px;" type="text"/> Submitter: <input style="width: 150px;" type="text"/> Z No: <input style="width: 80px;" type="text"/> Contact: <input style="width: 150px;" type="text"/> Z No: <input style="width: 80px;" type="text"/> Phone/Pager/e-mail: <input style="width: 150px;" type="text"/> DSESH Group: <input style="width: 80px;" type="text"/> | | | | | | 2 <input type="checkbox"/> PRIORITY <input type="checkbox"/> EMERGENCY 3 Tracking Number <div style="border: 1px solid black; height: 100px; width: 100%;"></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Sample Types and Analyses <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>NuCon</th> <th>Air Filter</th> <th>Activity Report</th> <th>LSC/H-3 Smear</th> <th>Liquid</th> <th>Oil</th> <th>Nasal Smear</th> <th>H-3 Air Filter</th> <th>Charcoal Filter</th> <th>Other</th> </tr> </thead> <tbody> <tr> <td>Gross α/β</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Contact</td> </tr> <tr> <td>Liquid Scint.</td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Contact</td> </tr> <tr> <td>Isotopic</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Contact</td> <td>Contact</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Contact</td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Leak Test</td> <td><input type="checkbox"/></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td><input type="checkbox"/></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Source Std</td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> | | | | | | | NuCon | Air Filter | Activity Report | LSC/H-3 Smear | Liquid | Oil | Nasal Smear | H-3 Air Filter | Charcoal Filter | Other | Gross α/β | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | Contact | Liquid Scint. | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Contact | Isotopic | <input type="checkbox"/> | <input type="checkbox"/> | Contact | Contact | <input type="checkbox"/> | <input type="checkbox"/> | Contact | | <input type="checkbox"/> | <input type="checkbox"/> | Leak Test | <input type="checkbox"/> | | | <input type="checkbox"/> | | | | | | <input type="checkbox"/> | Source Std | | | | | | | | | | <input type="checkbox"/> | 5 Comments to HPAL <div style="border: 1px solid black; height: 150px; width: 100%;"></div> | |
| | NuCon | Air Filter | Activity Report | LSC/H-3 Smear | Liquid | Oil | Nasal Smear | H-3 Air Filter | Charcoal Filter | Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gross α/β | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | Contact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Liquid Scint. | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Contact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Isotopic | <input type="checkbox"/> | <input type="checkbox"/> | Contact | Contact | <input type="checkbox"/> | <input type="checkbox"/> | Contact | | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leak Test | <input type="checkbox"/> | | | <input type="checkbox"/> | | | | | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Source Std | | | | | | | | | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Isotopic, Leak Test, and Source Std.: Field Screen Isotopes(s): <input style="width: 150px;" type="text"/> dpm α <input style="width: 50px;" type="text"/> dpm β <input style="width: 50px;" type="text"/> | | | | | | 6 RPO/RWP No. <div style="border: 1px solid black; height: 50px; width: 100%;"></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 <input type="checkbox"/> Samples with $\geq 20k$ dpm alpha, $\geq 100k$ dpm or ≥ 0.5 mR/hr on contact beta/gamma, or $\geq 400k$ dpm tritium <input type="checkbox"/> Hazardous Materials KNOWN or Likely to be present. List: <input style="width: 150px;" type="text"/> | | | | | | <input type="checkbox"/> Special Tritium Compound (STC). STC Type: <input style="width: 100px;" type="text"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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HPAL Submittal Form

| | | | | | | |
|----------|--|------------------|--------------------------------------|-----------|------------|------|
| 7 | <input type="checkbox"/> Samples with $\geq 20k$ dpm alpha, $\geq 100k$ dpm or ≥ 0.5 mR/hr on contact beta/gamma, or $\geq 400k$ dpm tritium <input type="checkbox"/> Special Tritium Compound (STC). | | | | | |
| | <input type="checkbox"/> Hazardous Materials KNOWN or Likely to be present. List: | | | STC Type: | | |
| 8 | SAMPLE TYPE: SMEARS/LIQUID/OTHER | | | | | |
| | Sample ID | Sample Date/Time | Description (Location, volume, etc.) | | | |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 9 | SAMPLE TYPE: AIR FILTER/CAM FILTER/FAS/CHARCOAL Flow Rate Units: <input type="checkbox"/> CFM <input type="checkbox"/> LPM | | | | | |
| | Location or Description | Sample On | | | Sample Off | |
| | | Date | Time | Flow Rate | Date | Time |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

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| | | | | | |
|-----------|---------------------------------|------|-------|----------------------------------|----------------------------------|
| 10 | SAMPLE TYPE: NASAL SMEAR | | Type: | Routine <input type="checkbox"/> | Special <input type="checkbox"/> |
| | Name | Z No | Group | Resp. | Date |
| 1 | | | | <input type="checkbox"/> | |
| 2 | | | | <input type="checkbox"/> | |
| 3 | | | | <input type="checkbox"/> | |
| 4 | | | | <input type="checkbox"/> | |
| 5 | | | | <input type="checkbox"/> | |
| 6 | | | | <input type="checkbox"/> | |
| 7 | | | | <input type="checkbox"/> | |
| 8 | | | | <input type="checkbox"/> | |
| 9 | | | | <input type="checkbox"/> | |
| 10 | | | | <input type="checkbox"/> | |

| | | | |
|---|--|------------------|---|
| RP-SVS HPAL SAMPLE SUBMITTAL FORM - Continuation | | | RP-SVS-HPAL-FORM-001 Effective Date: 17-Dec-15 |
| 1 | Submit Date: <input type="text"/> Contact: <input type="text"/> Z No: <input type="text"/> Phone/Pager/e-mail: <input type="text"/> Page <input type="text"/> of <input type="text"/> | | 3 Tracking Number |
| 8 | SAMPLE TYPE: SMEARS/LIQUID/OTHER | | |
| | Sample ID | Sample Date/Time | Description (Location, volume, etc.) |
| 6 | | | |
| 7 | | | |
| 8 | | | |

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Item Removal Log

| Los Alamos National Laboratory | | | | | Item Removal Log | | RP-1-Form-24.00 | |
|----------------------------------|------------------|---------------------------|-----------|------------|------------------|--------------------------|-----------------|----------|
| instrument type: | | | | | Location | | | |
| HSE number: | | | | | TA: | | | |
| calibration due: | | | | | bldg: | | | |
| background (α/β): | | | | | room: | | | |
| % efficiency (α/β): | | | | | area: | | | |
| date/time | item description | survey results | | | | Name, signature, Z# | | comments |
| | | alpha | | beta/gamma | | RCT: | | |
| | | direct | removable | direct | removable | | | |
| | | exterior (NDA or N/A) | | | | *Authorizing individual: | | |
| | | interior (PK, NDA or N/A) | | | | | | |
| | | | | | | | | |
| date/time | item description | survey results | | | | Name, signature, Z# | | comments |
| | | alpha | | beta/gamma | | RCT: | | |
| | | direct | removable | direct | removable | | | |
| | | exterior (NDA or N/A) | | | | *Authorizing individual: | | |
| | | interior (PK, NDA or N/A) | | | | | | |
| | | | | | | | | |

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2.01.04 Analysis Reports

- RP-1-DP-004.06, the Radiological Work Control Package (RWCP) Procedure, provides RP RWCP subject-matter experts (SMEs) with a means to establish controls for radiological work consistently and systematically. The process provides documented evidence of a thorough review of radiological hazards and states the designated controls for those hazards.
- The Radiation Protection Automation System (RPAS) is used by the RWCP SME to complete the Radiological Work Analysis (RWA) and develop RWPs.
- RCTs are responsible for reviewing the RWA and RWP with the RWCP SME.

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2.01.04 Analysis Reports

- The RWA system is used to define the radiological protection requirements, ALARA measures, hold points, and special instructions for the RWP.
- RCTs are responsible for reviewing the Radiological Work Analysis (RWA).
- RCTs must check into the RPAS system to review RWAs and RWPs.

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RPAS – Radiological Work Analysis (RWA)

View or Update the Radiological Work Analysis at the Job Level (RWP ID: 2012-0301)

Job Summary | Work Analysis | Review and Design | Hazards Screening | Pre-Job Briefing | EPD

Requester

ZNumber: 171508 [View Requester](#)

Name: Courville Kenneth C

Phone:

Group: RP-1

Primary SME

ZNumber: 171508 [View Primary SME](#)

Name: Courville Kenneth C

Backup SME

ZNumber: 109793 [View Backup SME](#)

Name: Lamonte Timothy G

Dates [Error 1]

RWP request made on: 10/17/2012 Submitted by Requester.

Effective Date: 10/26/2012

Expiration Date: 1/25/2013 Same as next Review date.

Identification

RWP ID: 2012-0301 Site: OJT RWP Request: Closed [View RWP Request](#)

Summary: Package Leaking Accountable Sealed Source & Performing Decontamination

RCT Support Information

Phone: 667-9358 Pager: 412-8659 Pages:

Pre-Job Survey done by RCT

ZNumber: [Lookup RCT](#)

Training Requirements

☒ APR ☐ GERT ☒ Red Worker ☐ Respirator ☐ SCBA

Note: Training requirements will include specific training plans, in this group box, in a future release of RPAS.

RWP Completion

Field Work End Date: End Reason:

RWP Status: **Active**

Active
Canceled
Stopped
Field Work is completed
Expired
RWP is not required and is not being tracked

Type: Information Requirement

Item:

Located on Tab:

Notes:

Audit Check (showing both Job and Stage level errors)

[Check Job Level](#)

☒ Audited

Errors: 0

Date: 10/19/2012

Time: 10:15:27

| Stg | # | Item | Tab Name | Notes |
|-----|---|------|----------|-------|
| | | | | |

Summary

An RWP is Required. An RWP is Required.

Contamination Controls are Required. Airborne Rad Controls are Required. External Radiation Controls are Required.

[Save the RWA at the Job Level and Exit](#) [Cancel](#)

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RPAS – Radiological Work Analysis (RWA)

View or Update the Radiological Work Analysis at the Job Level (RWP ID: 2013-0224)

Job Summary | Work Analysis | Review and Design | Hazards Screening | Pre-Job Briefing | EPD

Job Level Radiological Work Analysis

1. Energy from the System [Errors 11-12]
Are you adding/taking away energy from the system? (e.g. heating, cooling, pressure change, grinding, explosive) ☐ No ☒ Yes or Possible
Please explain:

2. Radioactive Sealed Source (RSS) [Error 13]
Will this work involve a Radioactive Sealed Source? ☐ No ☒ Yes or Possible
Answer question 3 on Accountable RSS.

3. Accountable RSS [Errors 14-15]
Is this an accountable radioactive sealed source or licensed by an agreement state? ☐ No ☒ Yes
Is the leak test current? ☐ No ☒ Yes

4. Radiation-Generating Device (RGD) [Errors 16-17]
Will a radiation-generating device be used? ☐ No ☒ Yes or Possible
Is the annual survey current, and is the machine approved for use? ☐ No ☐ Yes

5. Radioactive Material Transport [Errors 18-19]
Will any non RP-1 radioactive material be transported between or within Technical Area work locations? ☐ N/A ☐ No ☒ Yes or Possible
Have the Point of Contact (POC) contact Packaging and Transportation for proper radioactive material transport requirements for the safe and secure transfer of Nuclear Materials and Special Nuclear Materials (NM/SNM).
P & T Hazmat Field Operations transportation personnel are responsible for these transfers. Provide any necessary packaging and transportation requirements in a Hold Point or Instruction.
Is the receiving location prepared and authorized to receive the shipment? ☐ No ☒ Yes

Save the RWA at the Job Level and Exit Cancel

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RPAS – Radiological Work Analysis (RWA)

View or Update the Radiological Work Analysis at the Job Level (RWP ID: 2013-0224)

Job Summary | **Work Analysis** | Review and Design | Hazards Screening | Pre-Job Briefing | EPD

Activity Review

New Activity ALARA Review (ISD 121.1 §1126) [Error 21]

Will the work involve any of the following triggers for a New Activity ALARA Review? ☐ No ☒ Yes or Possible

- a. New, uncharacterized radiological operations.
- b. Increase in source term (quantity of radioactive material) above what is currently authorized and approved.
- c. Change in type of hazard, including a new radionuclide or physical/chemical form of material.
- d. Change in process or tools that would increase hazard or result in an uncharacterized condition.
- e. Change or new location from what is currently authorized and approved.
- f. Reduction of or significant change in engineered controls.
- g. Activities that have not been performed for 24 months or more whether or not previously reviewed and approved.

RP-1 Radiological Activity Review

See RP-1-DP-005-00 Radiological Activity Review procedure.

ZNumber:

Name:

Date:

Document:

Engineering Design

1. Over Pressurize a Glovebox [Errors 31-32]

Is there a potential to over pressurize a glove box or containment system? (For example, pneumatic tools, exothermic reaction) ☐ N/A ☐ No ☒ Yes or Possible

Specify the process and the authorization for the process.

Process:

Add instructions as necessary to mitigate this potential hazard.

Authorization

ZNumber:

Name:

Phone:

2. Glovebox Design [Error 35]

Is the glove box designed for the process that is specified in question 1? ☐ No or Not Sure ☒ Yes

3. Radiological Design Review [Errors 36-37]

Is the job a new process, a modification of a facility, etc.? ☐ No ☒ Yes or Possible

Based on the criteria in ISD 121-1.1 §1221, should RP-3 be consulted to provide a Radiological Design Review? ☐ No ☒ Yes

RP-3 Design

ZNumber:

Name:

Date:

Document:

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RPAS – Radiological Work Analysis (RWA)

View or Update the Radiological Work Analysis at the Job Level (RWP ID: 2013-0224)

Job Summary | Work Analysis | Review and Design | Hazards Screening | Pre-Job Briefing | EPD

Determine Additional Information Requirements

The following questions determine what, if any, additional information may be required.

| Question | Answers | Requirement |
|---|---|-------------|
| 1. Will the work be performed in, or likely to create, a Radiological Buffer Area for External Radiation purposes? | * 1. <input type="radio"/> No <input checked="" type="radio"/> Yes or Possible No FRPS | |
| 2. Will the work be performed in, or likely to create, a Radiation Area? | * 2. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 3. Will the work be performed in, or likely to create, a High Radiation Area? | 3. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 4. Will the work be performed in, or likely to create, a Very High Radiation Area? | 4. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 5. Will the work be performed in a Contamination Area, or likely to increase contamination levels? | * 5. <input type="radio"/> No <input checked="" type="radio"/> Yes or Possible No FRPS | |
| 6. Will the work be performed in a High Contamination Area? | 6. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 7. Will the work be performed in, or likely to create, an Airborne Radioactivity Area? | 7. <input type="radio"/> No <input checked="" type="radio"/> Yes or Possible | |
| 8. Will you breach a Contaminated or a potentially Contaminated System? | 8. <input type="radio"/> No <input checked="" type="radio"/> Yes or Possible | |
| 9. Will you disturb the soil in a Soil Contamination Area? | 9. <input type="radio"/> No <input checked="" type="radio"/> Yes or Possible | |
| 10. Could this work spread contamination into an uncontaminated area? | 10. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 11. Is there the potential for cross-contamination from other sources? | 11. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 12. Will contaminated or potentially contaminated surfaces be penetrated or disturbed? | 12. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 13. Will the work involve contamination under paint? | 13. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 14. Will the work be performed in an Underground Radioactive Material Area? | 14. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |
| 15. Will industrial radiography work be performed? If this will be a first time use, the work needs a review by RP-3. | 15. <input checked="" type="radio"/> No <input type="radio"/> Yes or Possible | |

Contamination Controls are Required **Airborne Rad Controls are Required.** **External Radiation Controls are Required.**

This is provided by personal protective equipment (PPE) and/or work area configuration controls. This is provided by using respiratory protection and/or work area configuration controls. This is provided by dosimetry and other methods.

RWA Determination

This Radiological Work Analysis (RWA) determines that the work WILL require a Radiological Work Permit (RWP).

Will an RWP be issued for tracking purposes? ☐ No ☒ Yes

Indicate what additional information you want to complete (even if they may not be required):

☐ Contamination Controls will be completed anyway ☐ Airborne Radioactivity Controls will be completed anyway ☐ External Radiation Controls will be completed anyway

Save the RWA at the Job Level and Exit Cancel

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RPAS – Radiological Work Analysis (RWA)

View or Update the Radiological Work Analysis at the Job Level (RWP ID: 2013-0224)

Job Summary | Work Analysis | Review and Design | Hazards Screening | Pre-Job Briefing | EPD

These topics that must be covered during the Pre-Job briefing

Check the appropriate checkboxes to instruct the RCT to cover specifically during the pre-job briefing.

| | |
|---|--|
| <input checked="" type="checkbox"/> RWP stage descriptions | <input type="checkbox"/> Containment systems used |
| <input checked="" type="checkbox"/> Personal Protective Equipment (PPE) | <input type="checkbox"/> Remote handling tools |
| <input checked="" type="checkbox"/> Expected and maximum conditions | <input type="checkbox"/> Temporary shielding |
| <input type="checkbox"/> Dosimetry requirements | <input type="checkbox"/> Local ventilation |
| <input type="checkbox"/> HEPA systems to be used | <input checked="" type="checkbox"/> Bioassay requirements |
| <input checked="" type="checkbox"/> Hold points and instructions | <input type="checkbox"/> Personnel monitoring instructions |
| <input checked="" type="checkbox"/> RCT coverage | <input type="checkbox"/> Special monitoring equipment |
| <input type="checkbox"/> Additional or other PPE | <input checked="" type="checkbox"/> Emergency procedures |

The Pre-Job Briefing is required to be given:

The pre-job briefing must be given whenever ANY of these events or intervals occurs:

Fixed interval:

☐ The PPE is upgraded or downgraded.

☐ The RWP is extended.

The Worker must read the RWP and sign the Acknowledgement Log

The worker must be read and sign whenever ANY of these events or intervals occurs:

Fixed interval:

☐ The PPE is upgraded or downgraded.

☐ The RWP is extended.

Save the RWA at the Job Level and Exit Cancel

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2.01.05 Radiological Deficiency Reports

- Radiation Protection Observations (RPOs) are used to capture, document, and record radiological conditions, observations, or incidents that are considered to be off-normal. Such conditions may have adverse effects on people, the environment, or facilities.
- The RPO system is used to issue RPOs and provides a means of notification to responsible individuals and a set of objective criteria for reporting; the system creates a record to which radiological information (including survey data) is permanently attached.

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RPO System

- The RPO System can be found from the Radiation Division webpage under Observations or at https://int.lanl.gov/safety/radiation_protection/observations.shtml
- The RPO system can be used to enter, update, and close RPOs.

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RPO System – Entering an RPO

The screenshot shows the LANL Inside website interface. At the top is a navigation bar with links for LANL External, phone, maps, orgs, alerts, emergency, library, and social media icons. Below this is the LANL Inside logo and a search bar. A secondary navigation bar lists various categories: Computing, Employees, Environment, Finance, News, Safety, Science, Security, and Services. The main content area is titled 'Observations' under the 'Safety' section. It includes a sidebar with a 'Radiation Protection' menu. The main text describes the RPO system and provides links for 'New Observation', 'Update Observations', and 'View Closed Observations'. A 'Contacts' box on the right lists Joe Bianconi and Roger Anaya for specific requests.

LANL External phone maps orgs alerts emergency library

LANL inside We make safety and security integral to everything we do!

Computing Employees Environment Finance News Safety Science Security Services

Safety » Radiation Protection » Observations

Safety

- Safety Leadership
- ALARA Center
- How to Report Safety Concern
- Industrial Hygiene and Safety
- Injury/Illness
- Integrated Work Management
- Radiation Protection**
 - Dosimetry & Measurements
 - Internal Dosimetry
 - **Observations**
 - Radiation Protection Program
 - Radiological Work Permits
 - Reproductive Health Assistance Program

Observations

Radiation Protection Observation System

The online Radiation Protection Observation System (RPO) will be used to record Radiation Protection Observations.

New Observation - Enter preliminary information and send the initial notification.

Update Observations - Update/add information about an observation.

View Closed Observations - View reports for observations that have been closed.

Contacts

For special data requests, contact:
[Joe Bianconi](#), 6-1917

For technical assistance, contact:
[Roger Anaya](#), 5-2804

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RPO System – Entering an RPO

Window ORACLE

New Observation

ID Description for Notification Locations Reporting Criteria Procedural Violation

Observation ID

Enter Date - Time mm/dd/yy hhmm (military)
of Occurrence

Entered By Name (last first mi) Z No Group

ESHQPRD1

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RPO System – Entering an RPO

Window ORACLE

New Observation | ID | Description for Notification | Locations | Reporting Criteria | Procedural Violation

Please give a brief description of the observation to be included in an e-mail notification to managers.
Do not include sensitive information such as individual's names or z numbers.

Description of Observation

What Happened:

The individual's group:

Where the observation occurred:

ESHQPRD1

Send Notification Cancel

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RPO System – Entering an RPO

Window ORACLE

New Observation

ID Description for Notification Locations Reporting Criteria Procedural Violation

TA Bldg Room Work Area FOD

ESHQPRD1

Send Notification Cancel

RPO System – Entering an RPO

Window ORACLE

New Observation

ID Description for Notification Locations Reporting Criteria Procedural Violation

Incident Priority: ?

Facility

☐ CAM alarm
Any CAM alarm (true or false)

☐ FAS
Filter > 1 DAC
Filter > 12 DAC-hrs/week
Unanticipated Release > 40 DAC-hrs

☐ Uncontrolled area
> [Contam Limit Table](#)

☐ Controlled area
> 5 times [Contam Limit Table](#)

☐ Rad buffer area
> 10 times [Contam Limit Table](#)

☐ Glovebox Glove Failure

☐ Other

Personnel

☐ Wound count

☐ Nasal swipe
Sum of both nostrils:
> 50 dpm alpha
> 500 dpm beta

☐ Facial contamination
Any detectable level

☐ Skin
Any detectable level

☐ Personal/lab clothing
Any detectable level

☐ Procedural Violation

☐ External exposure
Supplemental dosimeter
indicates > 150% of
estimated/anticipated

☐ Protective clothing
Unanticipated contamination
Alpha > 1000 dpm/100cm²
or Beta > 5000 dpm/100cm²
or .25 mR/hr

ESHQPRD1 Send Notification Cancel

RPO System – Entering an RPO

Window ORACLE

New Observation

| ID | Description for Notification | Locations | Reporting Criteria | Procedural Violation |
|----|------------------------------|-----------|--------------------|----------------------|
|----|------------------------------|-----------|--------------------|----------------------|

**** Indicates Entry is Required**

Operation Being Performed
**** Operation**
Additional Info

Procedures Followed and/or Violated

| ** Procedure Type | Procedure Id (Opt) | Governing Procedure | Procedure Violated |
|----------------------|----------------------|-------------------------------------|--------------------------|
| <input type="text"/> | <input type="text"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="text"/> | <input type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Procedure Violation Detail

| Human | | | Immediate | Additional |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| ** Action | ** Category | ** Detail | ** Actions Taken | Info |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Personnel Involved

| Zno | Name | Comment |
|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

**** Group Owner**
**** Effectiveness Rating**
**** Apparent Cause**

ESHQPRD1 Send Notification Cancel

2.01.06 P121, Chapter 3, *ALARA Program*

- Radiological work at the Laboratory must be conducted so that radiation doses resulting from the work are as low as reasonably achievable (ALARA).
- Current radiation protection standards assume that any radiation dose incurs an increased risk of detrimental health effects. Given this assumption, there is an obligation to justify, limit, and optimize occupational doses.
- Radiation doses must be optimized as far below applicable limits as is reasonably achievable, taking into account social, technical, economic, practical, and public policy considerations.

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P121, Chapter 3, *ALARA Program*

- The total dose (including external and internal) must be optimized.
- Radiological risks must be considered, along with other risks when determining hazards and controls, in accordance with Integrated Safety Management (ISM) principles.
- Optimization should be applied to both external exposure and the control of contamination, airborne radioactivity, and other modes of internal exposure.

P121, Chapter 3, *ALARA Program*

- Institutional Radiation Safety Committee (IRSC) is the formal ALARA committee for the laboratory.
- The IRSC's responsibilities include implementing the ALARA program and managing the ALARA goals process.
- Radiation safety committees must be established at the facility level to ensure implementation of the ALARA program. These committees are required when more than one local group-level organization expects a worker dose of 2 rem collective or 0.5 rem individual equivalent dose to the whole body.

P121, Chapter 3, *ALARA Program*

- An ALARA coordinator must be designated for each group-level organization that expects a worker dose at the levels of 2 rem collective or 0.5 rem individual equivalent dose to the whole body.
- Records demonstrating implementation of ALARA program elements must be retained.
- ALARA records to be retained include training documentation, design reviews, work control documents, and assessment reports.

ALARA – RCT Job Coverage

- RCTs must oversee work activities of operations personnel and identify and correct weaknesses in maintaining exposures ALARA.
- RCTs must consider time, distance, and shielding in assisting workers to keep doses ALARA.

ALARA – RWCP Procedure

- RP-1-DP-004.06, Radiological Work Control Package (RWCP) Procedure.
 - ALARA measures are determined in the RWA and specified in the RWP.
 - RCTs are responsible for reviewing the RWA.

2.01.07 Exposure Reports

- P121, Chapter 20, *Radiation Protection Records and Reports*, Article 2022, *Personnel Radiological Records*
- Individual monitoring records must be maintained, and all occupational doses received during the current year must be documented.
- P121, Table 4-2, Summary of Occupational Dose Limits

2.01.07 Table 4-2, Dose Limits

| Table 4-2. Summary of Occupational Dose Limits | |
|--|-----------------------------------|
| Type of Exposure | Limit (1) |
| Radiological worker: whole body (internal + external) total effective dose (TED) [see 835.202(a)] (2,3) | 5 rem/year |
| Radiological worker: lens of the eye (external) [see 835.202(a)] (4) | 15 rem/year |
| Radiological worker: skin and extremities (internal + external) [see 835.202(a)] (5) | 50 rem/year |
| Radiological worker: any organ or tissue (other than lens of eye) (internal + external) [see 835.202(a)] (6) | 50 rem/year |
| Declared pregnant worker: embryo/fetus (internal + external) [see 835.206(a)] | 0.5 rem/gestation period |
| Minors: whole body (internal + external) (TED) [see 835.207] | 0.1 rem/year |
| Minors: lens of the eye, skin, and extremities [see 835.207] | 10% of radiological worker limits |
| General employee (nonradiological worker): whole body (internal + external) (TED) | 0.1 rem/year |
| Member of the public (nonradiological worker): whole body (internal + external) (TED) [see 835.208] (7) | 0.1 rem/year |

2.01.07 Table 4-2, Dose Limits, Notes

Notes:

1. Exposures resulting from background radiation, as a patient undergoing therapeutic and diagnostic medical procedures, or participating as a subject in medical research programs, must not be included in either personnel radiation dose records or assessment of dose against the limits in this table [see 835.202(c)].
2. TED must be the effective dose from external exposures + committed effective dose (CED) from internal exposures [see 835.2(a), .203(a)].
3. Determinations of the effective dose must be made using the radiation and tissue weighting factor values provided in 835.2(b) [see 835.203(b)].
4. Equivalent dose to the lens of the eye must be determined at a tissue depth of 0.3 cm [see 835.2(b)].
5. This reflects the sum of equivalent dose to the skin or to any extremity (determined at a tissue depth of 0.007 cm) and the committed equivalent dose to the skin or to any extremity [see 835.2(b), .202(a)].
6. The annual limit of dose to “any organ or tissue” must be based on the committed equivalent dose to that organ or tissue resulting from internally deposited radionuclides plus the equivalent dose to the whole body from external exposures during the year [see 835.202(a)(2), .202(a)].
7. While not considered “occupational dose”, the dose limit for members of the public is included here for brevity.

2.01.07 Exposure Reports

- Records of doses received by all individuals for whom individual monitoring was conducted, including records of zero dose, must be maintained and detailed enough to evaluate conformance to all applicable dose limits and monitoring and reporting requirements.

2.01.07 Exposure Reports

- Records associated with individuals, including radiation dose records, must contain, at a minimum, the following identifying information:
 - Individual's name,
 - Individual's Z number or other unique identification number,
 - Relevant dates for monitoring or reporting periods covered, and
 - The host Laboratory organization for that period.


2.01.07 Exposure Reports

- External dose records must include extremity, skin, lens of the eye, and whole-body dose monitoring results, evaluations resulting from anomalous dose results such as unexpected high or low doses, dose reconstruction from lost or damaged dosimeters or for unbadged workers, and evaluations of nonuniform radiation doses.
- Internal dose records resulting from whole-body and lung counting and from urine, fecal, and specimen analysis must be maintained and include the committed effective dose (CED), committed equivalent doses to the affected organs and tissues, and identity of radionuclides.

2.01.07 Exposure Reports

- The total effective dose (TED) received by each individual monitored must be maintained for each year the individual is monitored.
- The equivalent dose to the embryo/fetus of a declared pregnant worker must be maintained.
- Authorized emergency doses and planned special exposures (PSEs) must be accounted for separately but must be maintained with the individual's occupational dose records.
- Occupational exposure received at sites external to the Laboratory must be included in the dosimetry record.

2.01.07 Contaminated Person Survey Form

**Los Alamos**
NATIONAL LABORATORY
EST. 1943

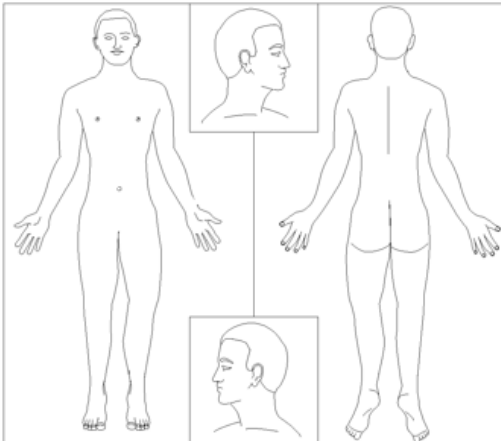
Contaminated Person Survey

Contaminated Person Information

Name Z Number Group

RCT Information

Name Z Number Signature



Instructions
Indicate survey points directly on the figures and list the results in the table of survey results. Attach a continuation sheet for additional survey points.
Request that the contaminated individual sign and date the form below after you have briefed the individual on the contamination that he or she received.
Make two copies of the form. Give a copy to the individual and send a copy to RP-SVS Dose Assessment Team at MS G761, on-call pager 231-5187.

☐ Check this box if there is a continuation sheet attached.

Contaminated Individual
This report is provided to inform you of your contamination levels as required by 10CFR § 835.801(e). Your signature below indicates you have been given a copy and briefed on the levels by radiation protection support personnel. You may contact the RP-SVS Dose Assessment Team at 231-5187 for further information as to the risks associated with these levels.

Signature of the contaminated individual Date

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2.01.07 Contaminated Person Survey Form

| Survey Information | | | | | |
|--------------------|----------------------------|----------------------|---|---------------------|-----|
| Date/time: | Location (TA, bldg, room): | RPO, Occurrence #: | Contamination type: <input type="checkbox"/> alpha <input type="checkbox"/> beta/gamma | Isotopes, if known: | |
| Instrument | Property number | Calibration due date | % Efficiency | Background | MDA |
| | | | | | |
| | | | | | |

| Table of Survey Results | | | | | | | | | | |
|-------------------------|---|-----------------------------------|---------------------------------|--|---------------------|---|--|---------------------------------|-------------------------------|-------------------------|
| Survey point | Cont. Type | Gross initial contamination (cpm) | Net initial contamination (dpm) | Contaminated surface area (cm ²) | Hot particle? (Y/N) | Locations: skin (S), hair (H), injury (I) | Decontamination method (mild soap, tape, etc.) | Gross results after decon (cpm) | Net results after decon (dpm) | Estimated exposure time |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |
| | <input type="checkbox"/> α <input type="checkbox"/> β/γ | | | | | | | | | |

| Comments |
|----------|
| |

2.01.07 Supplemental Dosimetry Issue Form

Attachment 1

SUPPLEMENTAL DOSIMETRY ISSUE SHEET

Location: _____

| Printed Name | Z # | Group or Employer | RWP or SOP # | ✓ this block if dose tracking report initiated | Date and Time of Issue | Dosimeter Type/ ID # | Initial Reading (mR) | Final Reading (mR) | Total Exposure (mR) | Comments |
|--------------|-----|-------------------|--------------|--|------------------------|----------------------|----------------------|--------------------|---------------------|----------|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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2.01.07 Containment Tent Daily Inspection

Containment Tent Daily Inspection Checklist

RP-1-FORM-05

Tent Location: _____ Tent ID: _____

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|
| Date | | | | | | | | | | |
| Physical integrity of tent is satisfactory. | | | | | | | | | | |
| Postings are visible and accurate. | | | | | | | | | | |
| Housekeeping satisfactory, including combustible materials Waste boxes, step-off pad, and doffing area are satisfactory. | | | | | | | | | | |
| Tent Ventilation and filter are working; DOS test is current. Inspection of tent interior is satisfactory. | | | | | | | | | | |
| Required fire suppression equipment is present. | | | | | | | | | | |
| PIC initials | | | | | | | | | | |
| FPE (when applicable)* | | | | | | | | | | |

* The FPE must sign the Containment Tent Daily Inspection Checklist before first use and at least once every 45 days. 30 days is recommended .

Instructions

1. The PIC or designee enters the date and initials each satisfactory item.
2. If an item is not satisfactory, write "fail" for that item.
3. If an item is not applicable, write "NA."
4. To insert additional inspection criteria, add rows to the table.

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2.01.08 Purpose of an RCT Logbook

- RP-SOP-070, *RP Communication Requirements*
 - The RCT logbook documents daily radiation protection support activities, including shift turnover information, radiological activities and issues, and documentation of details of off-normal events or incidents.
 - The Health Physics Field Coordinator (HPFC) should review logbooks daily but must review them at least weekly.

2.01.09 Items Documented in RCT Logbook

- RP-SOP-070, *RP Communication Requirements*, indicates that items that should be documented in an RCT logbook include, but are not limited to
 - “Hot Jobs”
 - Completion of compliance activities, e.g., routine monitoring instructions (RMIs)
 - Not completing compliance activities within the required timeframe, the actions taken, and personnel notified
 - Radiological incidents or occurrences and emergency actions taken

2.01.09 Items Documented in RCT Logbook

- Decontamination operations
- Special surveys
- Changes to radiological postings/conditions
- Emergency situations
- Off-normal or upset facility conditions
- Radiological equipment problems
- Special dosimetry requirements

2.01.09 Items Documented in RCT Logbook

- Responses to indications of personnel contamination. Document instances that were determined to be radon, the name of the individuals involved, and the reasons why the event was determined to be caused by radon.
- Other radiological alarms, not including spurious alarms from handheld personnel contamination monitors, e.g., Ludlum 214
- Discussion with operating groups regarding radiological safety

2.01.10 Records Management System

- Identify requirements for the records management system, such as Quality Control (QC), auditability/retrievability, and management information at LANL.

2.01.11 RCTs Role in Continuous Improvement of Radiological Controls

- P121, Chapter 19, *Performance Assurance*
 - The LANL RPP is subject to performance assurance processes based on regulatory and oversight requirements and other institutional and organizational drivers.
 - Three unique radiation protection performance assurance processes at LANL are the Triennial 10 CFR 835 assessment, RPOs, and Radiation Protection metrics.

P121, Chapter 19, *Performance Assurance*

- All performance assurance information (including assessments, events, and RPOs) is subject to review under the LANL Price Anderson Amendments Act (PAAA) process.
- The LANL PAAA Program is responsible for maintaining an internal compliance program that ensures prompt identification, screening, and reporting of noncompliances to DOE regulations pertaining to nuclear safety, radiation protection, worker safety and health, classified information security, quality, and employee concerns to build the strongest mitigation position for the Laboratory with respect to civil or other penalties.

P121, Chapter 19, *Performance Assurance*

- RPOs are used to capture, document, and record radiological conditions, observations, or incidents that are considered off-normal. Such conditions may have adverse effects on people, the environment, or facilities.
- RPOs are managed by the RP Division as a mechanism for
 - Documenting incidents or concerns that may indicate a breakdown of radiological controls, a weakness in local implementation of RP requirements, or a deficiency in the LANL RPP;

P121, Chapter 19, *Performance Assurance* (cont)

- Identifying and promptly communicating radiological incidents or conditions for individual review against Occurrence Reporting and Processing System (ORPS) and PAAA reporting criteria and issue tracking as necessary through the Laboratory's Performance Feedback and Improvement process;
- Tracking incidents collectively to identify systemic RP issues, including providing data for institutional radiation protection metrics;
- Tracking individual or system parameters (e.g., false-alarm rates for monitoring equipment);

P121, Chapter 19, *Performance Assurance*

- Recording conditions and data regarding radiological events for help in assessing dose; and
- Recording status of regulatory compliance.
- To address issues promptly and to prevent recurrence, facts related to such conditions must be promptly gathered to satisfy reporting and investigation requirements.

2.01.11 RCTs' Role in Continuous Improvement of Radiological Controls

- RCTs must pause or stop work when
 - significant radiological safety discrepancies are discovered or
 - unexpected conditions are identified or significant radiological safety discrepancies are discovered.
- RCTs perform on-the-spot correction of workers not complying with proper radiological work practices.
- RCTs oversee work activities of operations personnel and identify and correct weaknesses in maintaining exposures ALARA.